LESIONS

OF THE

EPIGLOTTIC CARTILAGE.

BY HORACE GREEN, M.D., LL.D.,

PRESIDENT OF THE FACULTY, AND EMERITUS PROFESSOR OF THE THEORY AND PRACTICE OF MEDICINE IN THE NEW YORK MEDICAL COLLEGE; CORRESPONDING FELLOW OF THE LONDON MEDICAL SOCIETY; MEMBER OF THE AMERICAN MEDICAL ASSOCIATION, ETC.

FROM THE AMERICAN MEDICAL MONTHLY FOR OCTOBER.

NEW YORK:
EDWARD P. ALLEN, 9 SPRUCE STREET.

1857.

LESIONS

OF THE

EPIGLOTTIC CARTILAGE.

By HORACE GREEN, M.D., LL.D.

The epiglottis is subjected to lesions which not only interfere with the functions of this organ, but which are often the exciting cause of general disease,—sometimes of a serious character.

Some of these morbid changes occur much more frequently than we have been accustomed to suppose; and the symptoms to which they give rise are often erroneously attributed to organic disease of the lungs, or to other structural changes which do not exist.

Anatomically viewed, the epiglottis is a fibro-cartilage of an ovoid form, and of a tissue very elastic. It is covered by a mucous membrane which consists of a ciliated epithelium externally, and beneath this a basement layer which is the true membrane, and a quantity of areolar tissue, all abundantly supplied with blood-vessels.

Scattered over the surface of this lining membrane, and situated in the sub-mucous tissue, are numerous follicular cells, many of which have the openings of their excretory tubes on the laryngeal face of this cartilage. One of these glands, which is composed of several granules, is located between the epiglottis and the os hyoides, and is called the *epiglottic gland*. On the laryngeal face of the epiglottis, the mucous membrane adheres closely to the cartilage; there being

no areolar tissue whatever interposed between the lining membrane and the cartilage. Beneath the mucous membrane on its anterior or lingual surface, considerable areolar tissue is deposited. Disease, therefore, affecting this fibro-cartilage must have its seat, either in the mucous membrane or its follicles, or in the subjacent areolar tissue. We find, accordingly, the principal lesions of the epiglottis to be :—

1st. *Erosions* or *abrasions* of its mucous membrane.

2d. *Ulcerations* of the membrane and of its glands.

3d. *Œdema*, or *infiltration* of its areolar tissue.

These alterations of structure occur, with regard to frequency, in the order in which they are named.

Some of the erosions and ulcerations of the epiglottis to which I propose to call attention, (a portion of them) are entirely independent of those described by M. Louis as lesions proper to phthisis, which he found were present in about one-sixth of his patients who died of this disease ; and were caused, in the opinion of M. Louis, by the constant passage of pus over the mucous membrane.

In many instances I have found these structural alterations to occur as primary and independent affections, so far as tubercular disease is concerned. In other cases they are not only complicated with similar lesions of the tonsils, fauces, and pharynx, but are occasionally associated with tuberculosis.

1. *Erosions of the mucous membrane of the Epiglottis.*

Prof. Hasse, who describes quite minutely those erosions of the mucous membrane of the air-passages, first pointed out by Louis, as alterations peculiar to phthisis, says that these lesions always remain superficial ; the upper layer of the mucous membrane, probably the epithelium, being alone engaged. They are seen in certain localities, as the inferior surface of the epiglottis, the posterior surface of the trachea, and occupying the mucous membrane of the two main bronchi.

"These erosions," continues Prof. Hasse, "are obviously the sequence of superficial irritation of the mucous membrane ; and as they are principally met with in parts which come in contact with tuberculous matter expectorated from the lung, they not improbably owe their existence to this source."*

M. Trousseau entertains a similar opinion ; for, in speaking of these lesions as described by M. Louis, he remarks : "We have never found erosions except in patients attacked with pulmonary phthisis, which

* Pathological Anatomy, pp. 357–8.

observation would seem to justify the opinion of M. Louis, that these erosions are owing to the contact of pus which is constantly passing over the mucous membrane of the larynx and bronchi."* The same opinion with regard to the origin of these lesions is expressed by Andral and Cruveilhier; and more recently by Ryland and Gellerstedt. Indeed, most writers on the pathology of "diseases of the air-passages," since the promulgation of this doctrine by M. Louis, have adopted, and have copied into their writings,—some of them, apparently, without any personal investigation,—these views of the origin of erosions and ulcerations of the epiglottis and larynx.

Both Hasse and Rokitansky describe another form of superficial erosions which occur in certain cases of *typhus fever*, and are found seated "on the posterior wall of the larynx; on the lateral edges, and on the inferior surface of the epiglottis," where they present at first a roundish or lenticular form, with black or discolored edges; and which, often, change gradually into dirty eating ulcers.

During the past few years a large number of cases of erosions of the epiglottis have been noticed among my patients, occurring under circumstances altogether different from those under which they were observed by the above pathologists. They have generally been noticed as being complicated, either with follicular inflammation, or associated with catarrhal irritation of the mucous membrane of the respiratory passages, but in a large majority of cases entirely independent of tubercular disease.

During the last Winter and Spring, especially, a much larger number of cases has occurred, of erosions and ulcerations of the epiglottis, than had been observed during any previous season.

These instances, for the most part, have been found occurring in those cases, in which a persistent, teazing cough following chronic follicular disease, or common catarrhal inflammation, has obstinately resisted all the ordinary measures for its arrestment.

On depressing the tongue in such cases, by means of the ordinary bent spatula, or "tongue depresser," so as to bring the epiglottis into view, this cartilage has been found frequently inflamed, vascular, and its superior border marked, at one or more points, by distinct erosions. In much the largest proportion of cases, these erosions make their first appearance on the left superior edge of the epiglottis.

Next in frequency they will be found occupying its centre; and occasionally, but very rarely, in comparison with the two preceding

* Treatise on Laryngeal Phthisis, &c. By Trousseau & Belloc. p. 20.

locations, they have been observed on its right border. These erosions are not readily detected, at first, by the inattentive observer; as they are quite small, are only slightly depressed, with a pallid base, sometimes a little reddened, and with whitish, linear edges.

The surrounding mucous membrane is generally inflamed, its delicate network of superficial vessels is red and injected, and the epiglottis itself more or less thickened. The appearance and effects of these erosions may be still further illustrated by the following case :—

Case I.—I. H., a lawyer, from Virginia, and late State's Attorney, consulted me, May 28th, 1856. He had been affected nearly two years with chronic follicular disease of the throat, for which he had received both topical and general treatment, and had been greatly relieved.

Some six weeks or two months before his visit to New York, a severe cough came on, and was, after a time, attended by a free (apparently) bronchial expectoration, a cough which resisted all the ordinary means employed for its relief. His chest, which was remarkably well developed, was carefully examined, without detecting any signs of pulmonary or bronchial lesions. On examination, the throat revealed some remains of the follicular disease, but nothing sufficient to account for the symptoms present. Indeed, as no cough had existed when the throat was in its worst condition, it could not be attributed to the presence of follicular disease, which appeared to be confined to the upper part of the throat.

In pursuing the investigation, the tongue of the patient was forcibly depressed so as to bring the epiglottis into view, when this cartilage was found to be inflamed and thickened, its mucous membrane red and vascular, and its left superior border covered with erosions.

The patient at this time was harassed by a constant cough, which was attended by an abundant expectoration, and this had been his condition for many weeks.

It will not be supposed that these erosions of the epiglottis were the whole cause of this cough, and of the expectoration. I had seen at this time, and have since seen frequently, cases with these erosions present, unattended by any great amount of cough; but a cough once established, from any cause, and these lesions supervening, I have never seen a case in which this symptom did not obstinately resist all ordinary measures, so long as the *erosions* continued. These means having been fully employed in this case, the indication

seemed to be to check the irritation caused by the erosions. To accomplish this, the tongue was depressed so as to bring the epiglottis into view, and with an instrument prepared for this purpose, the erosions were touched with the solid nitrate of silver, whilst the body of the cartilage was freely sponged with a strong solution of the same remedy. This was done on the 28th of May, and the operation was repeated two days afterwards, and was followed by a most happy result. The cough was greatly diminished by the first application ; and on the 31st, the day after the second application, the patient called, and reported himself almost entirely free from cough and expectoration. A few more applications of the solution were made to the affected parts, in the course of the subsequent week, and Mr. H. returned to his home, apparently entirely free from the unfavorable symptoms with which he came.

I have stated that some lesions of the epiglottis occur with much greater frequency than the profession have been accustomed to suppose. This is certainly true with regard to these erosions. Within a few months quite a number of physicians have brought or sent their patients to my office for examination, who were suffering from a severe cough, and were apparently laboring under bronchial or laryngeal disease, for the treatment of which both general and topical measures had been unavailingly employed by these practitioners. In many of these instances the persistent cough was found to have been kept up by the presence of undetected erosions of the epiglottis ; for in nearly all such cases, the arrestment of these lesions was found efficient in promptly relieving the cough.

Several most interesting cases have come under my notice, in which the disease has occurred among physicians themselves.

In one instance a young physician was brought to my office by his friend, an older physician of this city, under whose care and treatment the patient had been for several weeks before I saw him. But inasmuch as a severe and obstinate cough, attended with free expectoration and with pains in the chest, continued to harass him, further aid was sought by both patient and attendant.

On examining the chest and finding no evidence of lesions there, sufficient to account for the symptoms, the throat was inspected, and the patient's epiglottis was found to be twice its natural thickness, was highly vascular, and its entire superior border covered with erosions.

In this case, the principal erosion occupied the *right* superior lateral border of the cartilage, and the doctor was constantly referring

to the right side of his throat as the seat of the greatest amount of irritation. His cough had been very severe for nearly two months, and was attended with much expectoration and with more or less pain in the chest. He had consequently suffered much anxiety about the safety of his lungs.

Cauterizations of the border of the epiglottis, with the solid crystal of the nitrate of silver, gave almost immediate relief. The cough and expectoration began to subside, as soon as this remedy was employed. After a few applications of the solid nitrate, a strong solution was employed, and was applied every few days, for several weeks, not only to the border of the epiglottis, but also to the whole body of the cartilage. Under this treatment, the patient recovered perfectly.

Although, in almost all cases, lesions of this nature are promptly relieved by cauterizations, yet, in some instances, I have observed a marked tendency in the disease to return, whenever the patient was exposed to the ordinary causes of catarrh. In July, 1855, Dr. Bowen, of Jeffersontown, Virginia, brought his sister, a young lady, to New York, for medical treatment. Miss B. had many of the early symptoms of phthisis, for the treatment of which the ordinary remedies had been long employed by her brother. Complicated with chronic follicular disease, erosion of the epiglottis was found present, and this lesion proved to have been the principal exciting cause of a long continued cough ; for, after a few applications to the diseased parts the erosions disappeared, and the cough ceased altogether. On taking cold a few weeks after, the cough returned, with nearly as much severity as at first ; and when the epiglottis was examined, it was found to be again eroded. The topical applications were once more successful in affording prompt relief. Miss B. remained three or four months in this city, and during that period, she had several severe attacks of cough, and in every instance erosions of the epiglottic cartilage were ascertained to exist, and these were always removed, and the cough arrested, by topical medication. She, however, ultimately, quite recovered.

Under the head of erosions, I will allude to only one other instance of this affection. It is a case of much interest, as it occurred in an elderly physician of this city—a member of the Academy, and a gentlemen well known to most of its fellows.

This physician came to me early last Winter, expressing much anxiety about his case. He had had an obstinate cough for several months ; had employed in his own case, he said, all the ordinary

means which he had been accustomed to use with his patients ; but had found no permanent relief. He had only slight expectoration, but an harassing dry cough. Sometimes the cough would occur in paroxysms, and with great severity.

The Doctor was confident the irritation was seated in the larynx, and as he had himself applied topical remedies to his own throat for some time, he desired that the sponge-probang should be carried down to the superior portion of the larynx.

This was done, on several occasions, and was followed by considerable relief ; but still the cough continued, and was always greatly aggravated by exposure to cold, and by the vicissitudes of the weather.

In the meantime, the Doctor's epiglottis had not been examined, because attention having been called so directly to the larynx, as the seat of the disease, this organ had been overlooked. It was now inspected, and found in an inflamed and thickened condition ; its delicate network of vessels was red, and highly injected, and its border eroded.

Applications made to this organ, as in the preceding cases, gave prompt relief, and for a time Doctor M. thought his disease was removed. But he soon found that on every slight exposure to cold, his cough was sure to return, and that too, after the epiglottis appeared to be in nearly a healthful state. As the applications now only afforded temporary relief, they were for a time suspended. Irritation in the throat soon became more harassing than ever ; and on the 20th of March, Dr. M. called and declared that for several days and nights his cough had been almost unbearable—that he had coughed every five minutes night and day, and that neither expectorants, nor anodynes, gave him any relief.

The Doctor had given much attention to his own case, and he expressed the opinion that the same irritation that affected the epiglottis had extended along its lateral border, to the aryteno-epiglottic folds, and that erosions or ulcerations in this location, were causing the incessant cough.

This opinion could not be confirmed by inspection, as in the case of erosions of the border of the epiglottis, for these epiglottic folds are concealed from view, behind this cartilage; they can be reached, however, by topical applications, and at the patient's request, I applied, by means of a small sponge-probang, a strong solution (50 grains to the oz. of water) to the membranous folds, extending from the base of the epiglottis, to the arytenoid cartilage, which folds form

the lateral borders of the aperture of the glottis. The relief was immediate. Before this application, the great irritation at the opening of the glottis had caused an almost incessant cough, for forty-eight hours. For several hours succeeding the operation, the Doctor declared that he did not cough once, and the following night with him was one of quiet sleep.

The prompt relief which a single application of the caustic to an irritated and eroded epiglottis will sometimes afford, has often been with us a matter of great surprise, as well as of gratification.

Within a few weeks, a gentleman came to New York from St. Louis, who had been treated several months by a skilful and eminent physician for chronic follicular disease. Frequent applications of the nitrate of silver solution, had been made to the fauces and pharynx of the patient, and with much benefit, so far as the disease of these parts was concerned. Still, the patient complained of great irritation, at the top of the wind-pipe ; and, following the advice of his physician, he consulted me.

An examination of his case revealed an epiglottis inflamed, and considerably thickened at its apex, with an erosion directly in its centre. A single free application of the solid nitrate of silver at this point gave, for a time, entire relief, and these applications being repeated daily for a few days, removed permanently a tickling and an irritation that had continued, and had caused a cough for many months.

In some instances the erosion will occupy all the superior edge of the epiglottis. I had an opportunity of exhibiting a case of this nature to Dr. A. H. Stevens, and to the chairman of that committee which was appointed by this Academy, a year or two ago, to visit me on another subject. It was the case of a lady from Rhode Island, who, for a twelvemonth or more, had labored under a severe spasmodic cough, occasioned, as her physician supposed, by chronic follicular disease. In this instance the entire superior border of the epiglottis was covered by a linear erosion. It was a well-marked instance of this lesion, and these gentlemen may remember the case.

So far as my observation goes, these erosions are of rare occurrence in very young persons. To one such instance, however, I will briefly allude, as it is a case of much interest.

Some time ago, Mr. H. Hurlbut, a merchant of this city, brought one morning to my office his young daughter, a child some five or six years of age, who, as the father stated, had had a cough for several weeks, for which the family physician, who is an experienced practi-

tioner and a member of the Academy, had prescribed many of the ordinary remedies. Still her cough increased, and for several days preceding her visit to my office, had harassed her night and day, until the child was nearly worn out with the increasing irritation—an irritation which the patient constantly referred to the throat. Suspecting the nature and locality of the irritation, I attempted to examine the throat; the fauces and pharynx were inflamed, and although it was difficult to bring the epiglottis into view, so as to decide positively that erosions were present in that location, yet the symptoms were so like those which had occurred in other cases where erosions of this cartilage were found, that I ventured to make a free application of a strong solution of the nitrate of silver to the epiglottis. The result confirmed the diagnosis; the cough ceased immediately after this single cauterization; nor was there any return whatever of this symptom thereafter. This occurred many months ago, and within the present week Mr. Hurlburt assured me that his daughter "had not coughed since that visit to my office."

The announcement of the great frequency with which these lesions which we have been considering occur, will, I doubt not, surprise the profession.

Since my attention has been called to their existence, I confess I have been amazed, not only at the number of cases in which they have been found, but at the occasional severity of the symptoms caused by these apparently insignificant lesions, and the frequency with which these symptoms have been attributed to other causes.

I am indebted to my assistant, Dr. Richards, who has kept a careful record of these cases, for an account of the number of instances in which, during the last twelve months, erosions of the epiglottis have been observed.

Of four hundred and two patients affected with some form of disease of the respiratory passages, who were examined and treated between the 1st of May, 1856, and the 30th of April, 1857, there were found thirty-four instances of well marked *erosions* of the epiglottis. Of this number twenty-one cases occurred in males, and thirteen in females. In upwards of twenty of the above cases, these lesions existed entirely independent of tubercular disease.

2. *Ulcerations of the Mucous Membrane, or of the Glands of the Epiglottis.*

It is important to understand the pathological differences, if any exist, between erosions and ulcerations of the mucous membrane. M. Louis, in describing the lesions of the mucous membrane of the

epiglottis and larynx, in phthisis caused by the contact of tuberculous matter, speaks only of *ulcerations*. He undoubtedly considered *erosions* as but the first degree of ulceration, for he remarks that some of these ulcerations escape notice on account of the flattening of their edges, and "their pinkish color," and that "in two cases only did the superficial ulcerations of the epiglottis reach the fibro-cartilage beneath."

Prof. Hasse declares that tuberculous erosions are limited to the epithelial covering, and "hence they are not always detected at first sight, but that true ulceration of the mucous membrane in phthisis presents a notable difference from the above." *

I have watched these lesions with great care, and, however long continued, have found them always remaining superficial.

I have never observed an erosion to degenerate into a true ulceration.

Primary ulcerations of the epiglottis—many instances of which I have observed to exist entirely independent of tuberculous disease—differ essentially, in their anatomical characters, from the erosions of the same organ.

According to Hasse, the tuberculous ulcer, or the ulcer peculiar to phthisis, occurs most frequently in the larynx, but they are found in many instances, observes Hasse, on the posterior face of the epiglottis, and they appear to originate in various ways.

"Tubercle commonly," says he, "accumulates within the capsules of the muciperous glands, elevating the latter into little eminences, and ultimately, when the softening process is completed, leaving corresponding ulcers in their stead."† In other cases, again, tubercle cells, instead of normal cells, form beneath the epithelial covering, and irritating the contiguous textures, produce first, loss of substance, and finally ulcers. But ulcerations of the epiglottis occur, as we have before stated, wholly uncomplicated with tubercular disease of the lungs. I have the record of many such cases, which have been treated within the past four or five years. They have also been found associated with both tuberculous and syphilitic diseases.

So far as I have been able to notice the inception of primary ulcers of the epiglottis, they have seemed to originate in the follicles of the membrane, and not to be the result of erosions.

At first, an enlarged, or pimple-like follicle appears on the border of the epiglottis, surrounded by an inflamed and highly injected portion of mucous membrane. Soon the follicle softens, and degenerates

* Op. citat. pp. 357–8.

† Op. citat. p. 359.

into an ulcer, with irregular edges and an inflamed and reddened circumference.

In many instances these ulcers remain for some time superficial, destroying only the mucous membrane ; in others, they penetrate deep into the fibro-cartilage, and occasionally they result in the total destruction of the epiglottis. Two such instances have been observed by me in which the epiglottic cartilage was completely destroyed by ulceration. To these cases I may allude hereafter.

To the first case of primary ulceration of the epiglottis, which I have on record, my attention was accidentally called. I had no preconceived opinion of any lesions of this nature, except such as Louis, Cruveilhier, and other pathologists, had described, as being peculiar to, and complicated with, tuberculosis—lesions, in short, which have only claimed the attention of the practitioner *after* the death of his patient ; and not such as are the efficient cause of disease, and whose removal will effectually arrest diseased action.

The following is the case to which I refer :—

Several years ago, Mr. E. Bulkley, a shipping merchant, of this city, aged about twenty-five years, applied to me on account of a cough under which he had labored for several weeks. It came on gradually, at first, but latterly had much increased in severity. A careful examination was made to ascertain the cause of the cough. Slight redness was observed about the fauces, but not sufficient to account for the severity and persistence of the most prominent symptom. Not the slightest indication of disease could be found about the chest of the patient. The epiglottis was not inspected, because at this time we were not accustomed to examine this organ for pathological revelations. Indeed, at this period, large numbers of the profession had never seen a *living* epiglottis !

General measures were adopted in the treatment of this case, and for several weeks alteratives, followed by anodynes, expectorants, sedatives, and various other means, were employed to relieve the cough, without producing any permanently beneficial effect. On the contrary, at the end of the third week this symptom was much augmented ; and was attended, moreover, with a free expectoration. The patient was daily losing flesh, and he now began to complain of erratic pains in his chest.

These symptoms alarmed both himself and his friends ; and, urged by the latter, he determined on taking a sea voyage. To inform me of this, his intention, he called about four weeks after he first came under treatment. At this visit I again examined his chest, without

discovering any evidence of thoracic disease. His throat, too, was more thoroughly inspected than at any former time. On exposing the epiglottis to view, I was surrprised to find the upper border of this organ occupied by a large ulcer, which had destroyed a considerable part of the superior central portion of this cartilage.

I informed my patient of the discovery, and proposed immediate cauterization. The ulcer was touched with the solid nitrate of silver without producing any pain or irritation whatever! Mr. B. has since frequently declared that his "cough ceased from that hour."

It was not altogether arrested by this single application; but the relief was remarkable. He coughed but little for the next twenty-four hours; and two or three similar applications subsequently made, were effectual in entirely arresting the cough; and my patient regained, rapidly and permanently, his health.

It cannot be doubted, I think, had this local source of irritation been continued, that disease of the lungs, in this case, would have been ultimately developed; and it is equally probable that an ulcer of the epiglottis, discovered after the fatal termination in such a case, would be considered not the *antecedent* and exciting cause of the general disease, but as the *sequent*, and would be classed among the tuberculous ulcers of M. Louis.

In several instances, all the prominent rational signs, with some of the earlier physical manifestations of pulmonary disease have been observed to follow long-continued ulceration of the epiglottis, all of which symptoms have been seen to disappear after these lesions have been healed. Within two years I have treated several medical men with erosions or ulcerations of this cartilage, whose symptoms were such as to have given them much anxiety about the safety of their lungs. I will here give briefly the case of a physician well known to the profession of New Jersey.

Dr. L—— S—— called on me in June, 1855, to consult me abou his health. During the preceding year he had been aware, he informed me, of some chronic irritation of his throat, for which he had occasionally applied the nitrate of silver solution. This gave him relief for a time, but three or four months before his visit to me, he began to cough, apparently from an increased irritation in the throat, but this irritation was not now relieved by the cauterizations. This cough, on the contrary, increased in severity, was obstinate, not being much influenced by any measures taken to relieve it. After a time some expectoration accompanied the cough, and these symptoms were followed by uneasy sensations or wandering pains about the chest

He lost flesh, and his strength diminished. Under these circumstances he determined, as he informed me, to give up his professional duties for a time, and seek to restore his health by a change of climate. It was at this stage of his impaired health that I saw him.

After hearing the doctor's history of his case, and particularly after examining his chest, and finding there no adequate cause for his severe and protracted cough, and other unfavorable symptoms, I suspected the presence of concealed erosions or ulcerations about the glottic or epiglottic regions. His throat was examined ; the mucous membrane of the fauces and pharynx was moderately inflamed, and some of its follicles were enlarged.

With some difficulty the epiglottis was brought into view, when an ulcer, which had destroyed the mucous membrane and had penetrated into the cartilage, was found in the centre of the apex of this organ. I was at once satisfied that the teazing and persistent cough which for several months had so annoyed Dr. S., was kept up by this condition of the epiglottis ; and the result of the treatment adopted confirmed this opinion. The ulcer was well cauterized with the solid crystal of the nitrate of silver, and a strong solution applied to the mucous membrane of the fauces and pharynx. As in the preceding case, this single cauterization arrested the cough ; and although Dr. S. returned several times subsequently and had the applications repeated on account of some remaining irritation, yet no further paroxysms of coughing occurred ; his unfavorable symptoms all disappeared, and he regained a good degree of health, which, I believe, still continues.

I have had an opportunity to exhibit these lesions of the epiglottis to many physicians who had never before seen anything of the kind in the living. Within a few weeks, when honored by a visit from three of the Senior Surgeons of the U. S. A.,—Drs. McDougal, of Baltimore, Finley, of Philadelphia, and Satterlee, of New York,—the case of a gentleman of this city, with a central ulceration of the epiglottis, was exhibited. This gentleman had been affected for two years with a cough, which he compared to the hooping cough, because of its severe and spasmodic character. Topical applications to the local disease in this case arrested the cough in the course of a few days.

When ulcerations occur on the laryngeal face of the epiglottis,—and in the tubercular cases observed by M. Louis, this surface of the organ, and generally speaking its lower half, was their almost exclusive seat,—it will be impossible to detect their presence by ocular

inspection, as you can in those cases in which the border is invaded. I have described elsewhere the alteration which takes place in the aspect of the epiglottis, when that cluster of follicles which is situated at the base of this organ, and which constitutes the epiglottic gland, becomes the seat of ulceration. Its naturally crescentic shape will be considerably increased when ulceration to any extent exists in this location.

In addition to the symptoms which have been enumerated, there is frequently some degree of pain in the larynx when the lower portion of the cartilage is ulcerated, together with more or less difficulty in deglutition. Aphonia is also present, because, generally speaking, there are, coincident with these lesions, at the base of the epiglottic gland, ulcerations in the larynx, and about the vocal chords.

The following case is of much interest, inasmuch as an opportunity was afforded, after treatment, of comparing the lesions with the symptoms which existed during life ; and of observing the effects of the treatment employed upon these lesions.

G. H. W. called on me for medical treatment May 10, 1850. His case presented all the well-marked symptoms of Laryngeal Phthisis. There was ulceration of the larynx. Complete aphonia existed, with a severe cough ; difficulty of swallowing, with dryness and heat in the throat ; some pain was present, which was increased on coughing. On examining the chest there were found indications of the presence of tubercles in both lungs, and evidence of a cavity in the left lung. The throat was inflamed, the epiglottis thickened and vascular, its border serrated with erosions, and its lateral edges approximated, so as to give the cartilage a more crescentic shape than is natural.

It is unnecessary to detail at length the treatment adopted. Both general and topical remedies were employed. Applications of a strong solution of nitrate of silver were made successively to the fauces, the epiglottis—its border and larygeal surface—to the glottis, and subsequently into the larynx and trachea. The topical treatment was continued daily, or every second day, through the months of May, June, and July.

Under this treatment the patient gradually and constantly improved. He regained his voice, his cough diminished, and his strength and flesh were considerably increased. Mr. W. was absent during the month of August, but he returned in September, and the applications to the trachea being again renewed, and for a time continued, were followed by such an improved state of his health,

that he returned to his occupation, which was that of book-keeper in a large mercantile house of this city. On the first of January, 1851, he called on me. At this time he coughed occasionally, and had some slight purulent expectoration, but he still continued greatly improved. After this I lost sight of him for several years, and knew nothing more of him until informed of his death by my colleague, Dr. H. G. Cox, who has kindly furnished me with the hist ry of his last fatal attack, and of the autopsy of the case.

Until within a few days of his death, Mr. W. had continued to enjoy such health that he was able to attend constantly to the duties of his calling. Dr. Cox, who attended his family, had seen him often, and had occasionally prescribed for him. Early in December, 1853, nearly four years after I first saw and treated him, he had left his place of business, one very cold and windy day, and was returning to his home. Wishing to see a man who lived in the West part of the City, he jumped from the omnibus at Canal street, and ran for some distance, facing a strong cold wind, when he was suddenly arrested by a hæmorrhage from the lungs. He was obliged to be taken home in a carriage. Dr. Cox was sent for, who found him raising, quite frequently, masses of coagulated blood. Every effort was made to arrest the bleeding, but all measures were alike unavailing. The hæmorrhage, which lasted two or three days, continued till the patient died. The body was examined by Dr. Cox. Evidences of former tubercles were found in both lungs, but no recent ones. In the left lung were the remains of a tuberculous cavity ; and, opening into this dry cavity, was the mouth of a small ruptured blood-vessel, the hæmorrhage from which had caused the patient's death.

On examining the epiglottis, larynx, and trachea, Dr. Cox found the cicatrix of a large ulcer at the centre and base of the epiglottis ; and scattered over the mucous membrane of the larynx and trachea the cicatrices of numerous small, superficial ulcerations were found. All had been perfectly healed.

Knowing that this patient had been under my care several years before (as above detailed), Dr. Cox removed the larynx and a portion of the trachea, and sent the morbid specimen to me. This I still have. By examining this pathological preparation, the marks of the superficial ulcerations along the tracheal membrane may be plainly seen, particularly the cicatrix of the large ulcer at the base of the epiglottis.

Now, I respectfully submit, if these erosions and ulcerations were caused, *primarily*, by the passage of tuberculous matter over the mu-

cous membrane of the parts where they were found, how is it that they were healed? (for the purulent expectoration continued long after the ulcerations were arrested) or, being healed, how should they have continued healed, through so long a period, when the *cause* of their production was remaining for a time constantly in operation?

I shall be pardoned, I hope, for alluding to one other instance of epiglottic and laryngeal disease, inasmuch as the gentleman of whose case I shall briefly speak, was several months under the treatment of the celebrated Hahnemann, and his final directions, as given to this gentleman, illustrate a principle in Hahnemannic practice which I believe has not yet been published to the world.

Mr. G. B., a merchant, formerly in this city, visited Europe in 1838, principally on account of a disease—laryngeal phthisis—under which he had labored for several years. After consulting several eminent men in London, he went to Paris, and placed himself under the immediate care of Hahnemann.

Being in Paris at that time, and occupying rooms in the same house with Mr. B., I saw him daily, and watched with much interest the effects of Hahnemann's treatment on the case.

Mr. B., who had been under the treatment of Dr. G—— (a Homœopathic physician of this City) before leaving for Paris, had the most entire and implicit confidence in this plan of treatment, and gave, therefore, during a period of three months, undeviating attention to all the rules and directions of his physician. It is sufficient to say, however, that no effect whatever was wrought upon his disease; and, at the close of the above period of time, he left Paris for home, utterly disheartened, "to die among his friends." I had preceded him, and arrived in New York a few weeks before he came, which was at the close of the year 1838. Soon after he reached home, or early in 1839, I was called to see him, and his case was one of the first I ever treated by topical medication.

It was a strongly marked case of chronic laryngitis, attended with ulcerations of the epiglottis, and of the larynx and trachea. He was much emaciated—had severe cough, with expectoration of purulent matter.

Mr. B. now gave me the history of his treatment under Hahnemann, and why he quitted him so abruptly.

Until within a short period of the time he left, Hahnemann had assured him of the positive, ultimate success in his case, of the "potentized" remedies. But finding, at length, that no effect was produced on the disease, he finally informed Mr. B. that such was the

peculiar character of his disease, that it could not be influenced by Homœopathic potions, and that the nature of the disease must be *changed*. He, therefore, advised Mr. B. to *contract syphilitic disease*, and await its secondary effect—the occurrence of ulcers of the throat; that these would eradicate his present disorder, and that Homœopathy, in turn, would find no difficulty in expelling from his system the syphilitic poison!

This patient was treated by me, through many months, by topical applications, as in the preceding cases, conjoined with appropriate general remedies, and ultimately quite recovered his health. Mr. B. is still living, and will bear testimony to the correctness of the above statement.*

The number of cases of ulcerations of the epiglottis, which occurred among the four hundred and two patients, treated during the last year, amounts to *twenty-six*—as estimated by Dr. Richards: about one-third of this number were females. I am confident, however, that a part of these cases, which have been recorded as ulcerations, were, in reality, erosions; because, at first, an erosion was considered as but the first stage of ulceration. The exact proportion of these lesions, therefore, has not been definitely ascertained. From more recent and careful observation, I am inclined to the opinion, that erosions of the epiglottis occur with fourfold more frequency than ulcerations of this organ.

3. *Œdema of the Epiglottis, or infiltration of its areolar tissue.*

It has been stated that the mucous membrane of the epiglottis, adheres closely to its posterior surface; there being no areolar tissue, whatever, interposed between the membrane and this cartilage on its laryngeal face. Consequently, in œdema of this organ, the infiltration of fluid must take place on the lingual surface; where considerable areolar tissue is deposited; and cannot by any possibility be effused on the posterior or laryngeal face of the epiglottis. It is not claimed by any pathological writer, that *œdema* of the epiglottis, like the erosions and ulcerations of this organ, is peculiar to phthisis, or

* I publish this statement concerning the practice of Hahnemann, for the particular benefit of Prof. Henderson, of Edinburgh. When Prof. Simpson was preparing his masterly exposition of the "Tenets and Tendencies of Homœopathy," I was in Edinburgh, and at his request gave him some illustrations of the principles and practices of Homœopathy in America. These he has embodied in the above work. In Prof. Henderson's Reply to Dr. Simpson's unanswerable facts and arguments, he devotes several pages of his work to a most appalling attack on me, and to the ridiculing of my name, instead of attempting to reply to the facts and illustrations I had given. I therefore record the above, concerning the practice of that great light in Medicine, that Prof. H. may have it to comment upon, in the next edition of his defence of Homœopathy.

to any other disease of the air-passages. It is an alteration of structure, having its origin, generally, in catarrhal inflammation ; and is most frequently observed in epidemic catarrhs, or influenzas. During the prevalence of an influenza, that occurred to some extent in New York, in the Winter of 1853, and again in 1854, I observed many cases of œdema of the epiglottis.

In the course of the past Winter, also, several persons, with this affection, have consulted me at my office for medical treatment. As we have stated, the infiltration of the sub-mucous areolar tissue occurs on the lingual surface of the cartilage causing the epiglottis frequently to assume a most anomalous aspect. Its lateral edges being rolled back and approximated, it presents, when the intumescence is considerable, much the appearance of a round tumor at the base of the tongue. Partial, and in some instances complete aphonia, is caused by this lesion of the epiglottic cartilage.

In a paper which was furnished by the writer, and which was read before the London Medical Society in April, 1854, on "Aphonia, arising from organic lesions," the following case of œdema of the epiglottis is related :

Case.—"A young gentleman, who, three weeks before, had had an attack of the prevailing epidemic [influenza], called on me, January 29th, 1853. The disease, in its early stage, was attended by a total loss of voice ; and it was in reference to this voiceless condition that my opinion was desired. Some degree of cough was present, attended with slight expectoration, but the respiration was but little affected. On depressing the tongue of the patient, the epiglottis wasr eadily brought into view, and it clearly presented that very anomalous aspect to which I have alluded.

Extensive infiltration having taken place in the sub-mucous tissue, on its anterior face, the cartilage was enormously enlarged, its lateral borders were turned backwards and approximated, and its whole appearance was that of a round, puffy tumor, lying at the opening of the glottis. Examining with the finger, for the arytenoid cartilages, they were found to be not involved in the œdematous infiltration ; and this exemption from the disease, in this location, accounted at once for the slight degree of difficulty presented in the respiration of the patient.

To procure a reäbsorption of the infiltrated serum, a strong solution of nit. argent. was applied freely to the epiglottis, and to the whole faucial region. A profuse expectoration of adhesive mucus, from these parts, followed the application. The topical remedy was

continued daily, for several days. Under its use, the tumefied epiglottis diminished constantly ; and at the end of a week the patient could speak aloud, although his voice had a muffled sound. Continuing the applications a few days longer, the epiglottis, at the end of this time, was found reduced to its normal size, and the patient's voice and general health were fully restored.

That the loss of voice in this case, as well as in many similar cases which have been observed depended on the intumescence of the epiglottis, has been proved repeatedly by the fact, that when the epiglottis has been thus œdematous, voicelessness in most cases has been present, and also by the other fact, that the voice in most of these cases returned after the œdema of the cartilage had been removed.

In some cases we have had œdema of the epiglottis, complicated with ulceration of this cartilage.

The following interesting case is of recent occurrence, and is one of this nature :

Case.—Mr. J. Dillon, a watchmaker residing in the Eastern part of the city, was brought to me, March 24th, 1857, in an extremely feeble condition. His wife, a strong robust woman, accompanied him, and aided him from the carriage into my office. I was struck with his peculiar appearance. In some respects he resembled a patient in the last stage of phthisis. He was entirely anæmic ; his countenance sallow and bloated, with complete aphonia, and a most harassing cough ; and, although very feeble, was not emaciated.

His wife gave a history of his case ; stating that her husband had enjoyed good health (with the exception of having been occasionally slightly troubled with hemorrhoids), until about three weeks before, when he took a hard cold, which was followed by inflammation and ulceration of the throat, and an entire loss of voice. A most severe spasmodic cough, likewise, came on, which for nearly three weeks, had harassed him day and night.

To relieve this obstinate cough, and improve vocalization, his attending physician had administered repeated emetics. The operation of these, together with the violent coughing, greatly increased his hemorrhoidal difficulty, so that, as both declared, the patient had lost from half a pint to a pint of blood daily, during the last two weeks. This accounted for the anæmic condition of the patient, and for his great feebleness. In searching out the cause of his cough, the lungs and throat were examined. The sounds on the right side were nearly healthy, a slight dulness on percussion was observed under the left clavicle, the inspiratory murmur was diminished in intensity, in

comparison with the right side, and expiration was prolonged.

The thoracic symptoms, however, were not sufficient to account for the severity of the cough. The patient stated that his throat had been ulcerated, but his physician who had cauterized it repeatedly, assured him that the ulcers were all healed. Still, as his cough was in no degree relieved, he had come to ask my opinion of his case. Depressing the patient's tongue with some force, so as to bring the epiglottis into view, this cartilage was found not only greatly œdematous, but its left superior border was covered by a large unhealthy looking ulcer. Judging from past experience, in such cases, I was at once fully satisfied that this lesion of the epiglottis was the cause of the protracted cough. I therefore desired him to return to his physician, and request him to come to my office, with the patient, the following day (for I was very anxious that he should know of this concealed local difficulty in his patient's case); or, if this was not convenient, to request him to examine for himself the epiglottis; confident that if the Doctor discovered the ulceration he would be able to relieve it, as he had already relieved others, in the upper part of the patient's throat. But the patient returned the next day, without the Doctor, bringing the request that I should treat the case, and the assurance of the Doctor that it was not necessary he should be present.

The treatment of this case was commenced, by applying a solution of the crystals of nitrate of silver, 80 grs. to the ounce, not only to the ulcerated border of the epiglottis, but to its whole lingual surface, and an alterative was also prescribed, in doses of a fluid drachm twice daily.

℞. Potass. Iodid. - - - ℥ij
Proto Iod. Hydrarg. gra. - - ij
Tinct. Gentianæ
Syr. Sarsap. co. - - - aa ℥ij
M.

March 26th. Find the patient greatly relieved, so far as his cough is concerned, but extremely prostrated, from the great loss of blood, which had escaped from the hemorrhoidal tumors. He has discharged, say his attendants, "half a pint of blood" several times in the twenty-four hours. The last discharge being still in the vessel, was examined, and found to consist of dark coagulated blood, half a pint at least, in amount.

The patient's face, hands and feet are bloated, and it is quite evident that unless the hæmorrhage be speedily checked, he will die

from loss of blood. An examination was made immediately after an evacuation of blood, when three large hemorrhoidal tumors were found. The mucous membrane, which covered these, was ulcerated at many points, through which openings the blood was constantly oozing.

It was determined to operate upon these tumors, with the *nitric acid*, instead of the knife or ligature ; accordingly the next day, the 27th, aided by my assistants—Drs. Richards and Farrington—the tumors being brought down by an effort of the patient, I painted their surface freely with the nitric acid ; a sponge wet with a solution of carbonate of soda was then applied to neutralize the redundant acid, and the parts being well smeared with sweet oil, were pressed back above the sphincter. The hæmorrhage was almost entirely arrested. A small amount of blood was discharged the next day, when the remaining portions of the tumors were again cauterized with the acid, after which the hæmorrhage ceased altogether. The operation proved perfectly successful.

During the two days, in which attention was given to the treatment of the piles, the epiglottis was neglected, and the patient's cough again increased. A few more applications were made to the epiglottis which reduced the œdema, and healed the ulcer. Tonics were administered to the patient, and he made a rapid recovery. He is now quite well, and is attending daily to his ordinary occupation.

It will be difficult to give the exact proportion of patients affected with œdema of the epiglottis, for in most instances of ulceration of the epiglottis, and in many cases of long-continued erosions of this organ, more or less œdema of the cartilage was found to be present. Dr. Richards has recorded twenty-nine cases of this lesion, which were observed among the four hundred and two patients to whom reference has been made. Eight only of the twenty-nine were females.

With those physiologists who have been accustomed to consider the integrity of the epiglottis, as being essential to the perfect act of deglutition, this may be an interesting inquiry—how far are the functions of this organ interfered with, by the lesions we have described ? Ordinarily, neither erosions nor ulcerations of the border of the epiglottis, will increase, to any extent, the difficulty of deglutition. Two cases have come under my notice, in each of which the epiglottis of the patient was entirely destroyed by œdema and ulceration ; and yet, in both instances, these patients, after a few

weeks, could swallow, either solids or liquids, without the slightest inconvenience. In both these instances the destruction of the epiglottis was caused by ulceration following extensive œdema of this organ ; a condition which supervened upon a constitutional syphilitic taint. In the first instance, I did not see the case until the epiglottis was nearly destroyed by ulceration.

The second case was that of an unmarried gentleman, of New York, who, several years before, had contracted syphilis, of which he had supposed himself to have been cured. After taking a severe cold in May, 1855, which was attended with inflammation of the throat, ulceration of the tonsils and soft palate set in, and was followed by œdema and ulceration of the epiglottis.

When I first saw this patient, the disease had been progressing several weeks. A large ulcer had perforated the velum, and several smaller ones were about the left palatine arch, and in the sub-tonsillary fossa. The epiglottis was extensively œdematous, and its superior portion much ulcerated. The act of swallowing was both difficult and painful. Constitutional remedies were administered, and the ulcerated points were touched with the solid caustic. Under this treatment the ulcerations healed rapidly ; the œdema of the epiglottis was reduced, and the patient, at the end of two or three weeks, could swallow without difficulty. He returned to his home in the country, and continued better until some time in July, when he had another attack, and came back to the city for further treatment. Similar measures were adopted, and at the end of a week he again returned home greatly improved in health. I saw no more of him until the 19th of October following, when he again called on me ; and on inspecting his throat at this time, I was greatly surprised to find that two-thirds of the epiglottic cartilage was already destroyed by ulceration. The remaining portion was freely cauterized with solid nitrate, but the ulceration was not arrested until the epiglottis was almost entirely destroyed, a very small part of the cartilage only remaining. During the progress of the ulceration the patient found but little difficulty in swallowing morsels of solid food, in moderate quantities, but when he attempted to take liquids of any kind a violent spasmodic and suffocative cough ensued, by which the fluids were frequently ejected through the nose. After a few weeks, however, the parts adjusted themselves to the exigency of the case, the glottis was closed without the aid of the epiglottis, and deglutition was accomplished, and has ever since been performed without any embarassment whatever ; nor has phonation, in any degree, been inter-

fered with by the loss of the epiglottis. This gentleman's case I have had opportunities of exhibiting to many physicians. By forcibly depressing the tongue, the lips of the glottis—not being concealed by the epiglottis—can be seen, and on directing the patient to make an effort at deglutition, the superior parts of the arytenoid cartilages have been seen to close latterly, like a double valve, over the glottic cavity.

In still another way we are able to demonstrate that the glottis in this case, is closed after the manner I have described. By thrusting the middle and longest finger over the base, or roots of the tongue, the opening of the glottis can be reached by its point ; and, on the moment of its touching the lips of the glottis, the irritation will cause a spasmodic closure of this opening, which can be distinctly felt by the finger.

All this accords with the facts elicited, and the conclusions adopted, by M. Longet, who has performed many interesting experiments on dogs, by completely excising the epiglottis, in several of these animals, and, observing, subsequently, the effect of this operation on the act of deglutition.

He found that solid food, after the removal of the epiglottis, still passed with facility, but that in the deglutition of liquids, some portions of the fluid would escape into the glottis, causing the convulsive cough. M. Longet also established this fact, that the closure of the glottis, sufficient to protect the trachea in deglutition, is still effected, ultimately not only after the loss of the epiglottis, but after a division of the nerves which control all the muscles proper to the larynx.

This occlusion of the glottis, under such circumstances, he found was effected, not through the influence of the crico-thyroid, nor the thyro-hyoid muscles, for these were paralyzed by a division of the nerves, but through the *inferior constrictors of the pharynx*, which by embracing the diverging alæ of the thyroid cartilage, folded them one against the other ; thus approximating the borders of the glottis, and closing, effectually, the opening of the larynx. In the cases to which I have referred, in which ulceration had destroyed entirely the epiglottis of the patients, the occlusion was effected apparently in the manner pointed out by Longet, for in both these patients, (and the experiment was made by several medical men besides myself,) in touching the opening of the glottis, the apices of the arytenoid cartilages, which form the lateral borders of this aperture, could be felt distinctly to close upon the end of the finger.

What, then, is the special function of the epiglottis, if its presence is not absolutely necessary to the integrity of deglutition?

The arytenoid muscles are the especial *constrictor* muscles of the glottis, and most physiologists have asserted that these muscles receive their nerves from the superior laryngeal; but M. Longet has demonstrated that they are supplied with filaments from the recurrent nerve, and that the mucous membrane covering the lips of the glottis, or the supra-glottic vestibule, in which is located that exquisite sensibility which is disturbed by the smallest drop of fluid, or the contact of any foreign body,—that this space receives its filaments from the internal branch of the superior laryngeal nerve. These two nerves communicate freely with each other, but they have no connection with the epiglottis, consequently the application of irritants to this body, will have no influence upon either the motor or sentient nerves, peculiar to the larynx. But when the irritation of the sensitive mucous membrane at the entrance of the glottis, occurs, it is quickly transferred to the constrictor muscles of the larynx. It is therefore not correct to state, as many anatomists do, that the epiglottis of itself "closes completely the opening of the larynx" in deglutition.

This cartilage being placed between the entrance of the larynx and the base of the tongue, is pressed downwards by the abasement of the latter, at the same moment that the larynx is moved upwards and forwards in the act of deglutition, and the epiglottis is, in this way, moulded upon, and partially closes the glottis, protecting, at the same time, the sensitive mucous membrane which covers the supra-glottic space.

Although contrary to the ordinary belief, yet we announce the fact, one which can be demonstrated any day,—as it has been a score of times, to medical men,—that the epiglottis in its normal condition is an almost insensible organ; it may be touched with the finger, with the handle of an instrument, without producing any irritation. It may even be cauterized, with the solid nitrate of silver, and no unpleasant sensation will be perceived by the patient, until the mucus which dissolves the caustic runs down and reaches the lips of the glottis, when a convulsive cough is produced.

When, however, this cartilage is eroded, or ulcerated, these lesions cause an irritation, which is not unfrequently followed by a severe and persistent spasmodic cough. This irritation, and consequent cough, I have been inclined to attribute to the morbid, or ulcerated secretion, running down and coming in contact with the

exquisitely sensitive mucous membrane which covers the supra-glottic space ; for this cough ceases at once, as we have seen, when this morbid exudation is arrested or changed. The special functions of the epiglottis, therefore, are, first, to render perfect the integrity of deglutition ; for, as M. Longet affirms, although men and animals when deprived of it, swallow without difficulty solid food, yet, it is not the same with liquids, for this cartilage serves to direct, past the two lateral portions of the larynx, the drops of liquid which, after deglutition, still lie upon the dorsum of the tongue, and which flow over the epiglottis, and by it are prevented from falling into the supra-glottic vestibule.

2d. In the act of vomiting, the occlusion of the glottis is effected by this cartilage, and thus the matters vomited, are prevented from entering the trachea. In rumination also, in animals, the alimentary ball is, in the same way, hindered from falling into the glottis.

Conclusions. The principal propositions embodied in this paper may be summed up in the following conclusions :

1st. The epiglottic cartilage is subject to serious alterations of structure, which, it is believed, have not received that attention in practical medicine which their importance demands. These lesions, which are ordinarily the result of inflammation, are *erosions* of the mucous membrane of the epiglottis. *Ulcerations* of the membrane and of its glands ; and *œdema* or *infiltration* of its areolar tissue.

2. Both erosions and ulcerations, although occasionally found associated with tuberculosis, yet are often found to exist as primary disease, being the antecedents, and in many instances, the exciting cause of other grave affections.

3. Erosions occur much more frequently than ulcerations ; they differ from the latter in being more superficial, as they are confined to the mucous membrane, and ordinarily to its epithelial layer.

4. Primary ulcerations of the epiglottis, are alterations of structure, differing essentially, as we have seen, from the erosions of this organ. They originate apparently in the follicles of the mucous membrane, which soften, ulcerate, and penetrating the fibro-cartilage, destroy, ultimately, a portion of the epiglottis, and if not arrested, prove the cause of still more serious disease.

5. Œdema of the epiglottis, or infiltration of its areolar tissue, is a lesion of this cartilage of somewhat frequent occurrence—the result, ordinarily, of catarrhal inflammation. It is attended, generally, with loss of voice, difficulty of deglutition, and is occasionally complicated with ulcerations of this cartilage, by which, in some instances, the epiglottis has been completely destroyed.

6. The epiglottis, which is almost insensible in its normal state, becomes, when diseased, frequently the source of great irritation to the more sensitive adjacent parts. The presence of this cartilage is not indispensably necessary to ensure deglutition, as deglutition may be performed in the absence of this organ. It is necessary, however, to render perfect this act ; but its most important function is to cover over and protect that exquisitely sensitive portion of mucous membrane which occupies the supra-glottic space, and which is the true sentinel at the glottic opening.

But the most important practical conclusion is found in these propositions, that some of the lesions which have now been described, are often, it is believed, not only among the earliest manifestations of thoracic diseases, but are themselves in many instances, the *true exciting cause* of these affections ; and furthermore, this postulate once established, that we have it in our power, by timely, topical medication, to arrest, positively, cases of disease which otherwise would, and in many instances which do, terminate fatally.